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Soil Conservation

NOVEMBER 1964
VOL. XXX NO. 4

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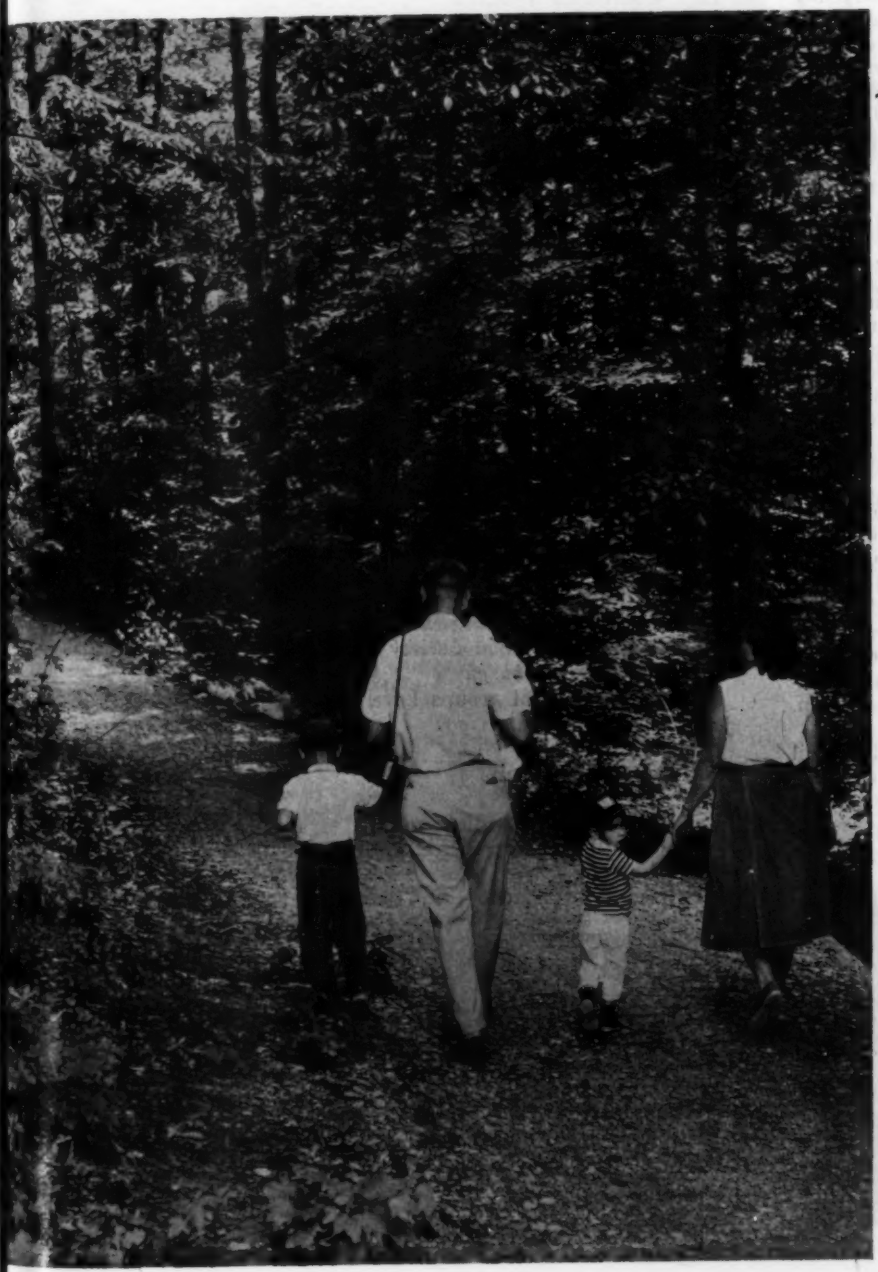

NATURE CONSERVATION

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—AND EDUCATION

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SOIL CONSERVATION SERVICE

U. S. DEPARTMENT OF AGRICULTURE

NOVEMBER 1964
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Naturally . . .

When we spread the word that *Soil Conservation* would feature conservation that preserves naturalness of landscape and abundance of wildlife for enjoyment and study, we hoped for two or three contributed articles that would effectively emphasize the theme.

The response surely will please Audubonites and others who make this their special concern. Manuscripts from SCS fieldmen not only would (and do, almost) fill this issue to the exclusion of all else, but another of equal size.

We think this must be a measure of the extent of nature conservation naturally resulting from soil and water conservation.

These are not mere exhortations to practice conservation; they are real examples of conservation practiced—on a watershed (p. 75), a strip-mine (p. 77), and many others.

You will see more of them later.

To Know Is to Care: Young people—and adults—who see, touch, and hear the living world around them become alert guardians of what they cherish. Natural areas and materials let them know their heritage, as at Ghost Ranch Museum (p. 78), Scout Jamboree (p. 84), and a school (p. 82).

Cover Picture: A wildlife trail leads a family into Brookfield Park, a recreation development in Northern Virginia Soil Conservation District.

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ORVILLE L. FREEMAN — **Secretary of Agriculture**
JOHN A. BAKER — **Assistant Secretary of Agriculture**
DONALD A. WILLIAMS — **Administrator, Soil Conservation Service**

Prepared in the Division of Information, Soil Conservation Service.

BEN O. OSBORN, Editor
GEORGIE A. KELLER, Editorial Assistant

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Watershed Wildlife

Ischua Creek shows how local people can provide widespread habitat

By Robert E. Myers and Homer E. Stennett
Wildlife Biologist, Syracuse, and Work Unit Conservationist, SCS, Jamestown, N. Y.

A pond and an odd area planting of multiflora rose, tartarian honeysuckle, autumn olive, and conifers provide wildlife habitat elements formerly missing in this open field on Fred Jentsch's farm.

FLOOD prevention dams and conservation land treatment on upstream areas normally provide both direct and indirect benefits to wildlife in small watershed projects under Public Law 566.

The project work plan can go much further, however, to provide specific improvements in habitat for both land- and water-dwelling species where the local people desire and interested organizations cooperate.

The 75,000-acre Ischua Creek watershed in southwestern New York is an example of how residents of a watershed can take advantage of the many opportunities for recreation and wildlife development in a project.

Incorporated into the designs for two of the flood prevention dams are provisions for large permanent lakes. A 35-acre trout-fishing lake and an 80-acre lake for boating and other recreation developments are being cost-shared by the New York State Conservation Department.

All of these developments are only an hour's drive from the Buffalo-Rochester urban complex of 2 million people. It is expected that these people will use the developments to capacity.

Not all the recreationists, however, will be looking for a place to picnic, swim, or fish. Many will come just to enjoy the quietness and beauty surrounding a lake nestled in a cool, wooded valley. Cameras will click and binoculars will search this new habitat for the wildlife attracted by the water.

There are plans for a 250-acre marsh that will attract herons, gallinules, and other marsh dwellers not so common around a lake.

Areas like these with their adjacent upland fields and woodlands present an opportunity for the local Audubon Society and other nature organizations to develop nature study areas with trails and information centers. These same sanctuaries can be used to good advantage by schools for outdoor

classrooms as part of their science programs.

Similar aquatic habitats will be created throughout the watershed by the farm ponds constructed for livestock or irrigation water, recreation, or fire protection. Already there are 74 ponds in Ischua Creek watershed, and plans call for at least 40 more. Some of them are stocked with fish, and 95 more are planned to be stocked.

A recent study by one of the authors revealed that an average of a third of all the farm ponds built through the soil and water conservation district programs are used for some form of nature study by members and friends of the owner's family.

Recently, a study group from the State University of New York at Buffalo made an extensive study of aquatic insects in one of the watershed ponds. They found larvae or adults of 19 aquatic insects such as dragonflies, water skippers, and water boatmen.

Ischua Creek is a fine brown trout stream, and on the main stream several flood-prevention structures have design features of interest to fishermen. It was recognized that a typical flood prevention dam with a shallow sediment pool could interfere with the upstream movement of trout and tend to warm the water. As a result, to keep the water cool, one of the major dams is designed with a pipe at stream level and without a sediment pool.

Home for Trout

The Ischua Creek plan calls for 21,000 feet of streambank protection and exclusion of livestock from 500 acres of critical areas. Fences will keep cattle from the banks except for a few gently sloping areas reserved for stream crossing. The raw banks are then shaped and seeded to grasses, legumes, and shrubs, or allowed to seed naturally. The vegetated banks provide food and cover for many kinds of wildlife, and the shade keeps the water cool.

More than 5 miles of trout stream improvement is planned and half has been completed by the State. This includes log V-dams and timber crib bank protection to provide pools and cover for trout.

In addition to the dams and stream improvements, the land treatment in the watershed is of great significance to all forms of wildlife. The varying combinations of soil and water conservation practices bring the necessary habitat elements of food, cover, and water together throughout the landscape. These conditions favor variety and abundance of wildlife.

Farmland Habitat

On cropland, contour stripcropping and rotations benefit wildlife most. Under a rotation of corn, oats, and hay in strips across the slope, the oats and corn are bordered on both sides by hay. Each field then includes wildlife foods along with nesting cover. Other habitat elements are supplied in odd areas, hedgerows, and woodlands.

Wildlife habitat development on odd areas can be planned to provide otherwise missing habitat elements. In Ischua Creek watershed, district cooperators already have developed 377 acres of habitat, and they are planning another 200 acres. On these areas farmers plant grasses, legumes, shrubs, or conifers as needed, or manipulate existing plants. Plans also call for 32,000 feet of hedgerows of shrubs and conifers.

Once the desired habitat is established, it must be maintained, otherwise through natural succession the area will become overgrown and the wildlife will be replaced by other species. Rotary brush cutters, chemical sprays, controlled burning, and grazing are used to control vegetation.

Pasture and hayland planting and renovation improve the quality of grassland for both livestock and wildlife. Pastures managed to prevent livestock from killing out the vegetation provide better nesting cover and food for the wildlife.

Woodlands that are kept in proper balance by harvest cutting, thinning, and weeding are most productive of wildlife. Exclusion of livestock permits young trees to grow to produce quality timber and provide browse, mast, and homes for wildlife.

A Farm Restored

As in many other parts of the country, many nonresidents have purchased farms in Ischua Creek watershed to develop them entirely for wildlife and recreation.

About 12 years ago, Fred Jentsch of Buffalo, bought such a farm and began his improvements following a conservation plan made with the help of the Soil Conservation Service.

The new owner kept an old orchard, a woodlot, and several brushy areas in their natural condition. He planted conifers and food plants where needed to diversify the habitat.

Five ponds and three marshes were built to provide water in the upland areas for wildlife and waterfowl and fishing and recreation for the family. He planted trefoil and timothy on wide trail-like strips throughout the farm. These are mowed periodically to maintain the open grassland condition. Now the once depleted farm is a delightful place for anyone who loves the outdoors.

Twenty-five years ago, the only good hunting in the Ischua Creek watershed was for deer. Today there is good hunting for grouse, rabbits, turkey, and waterfowl as well. Songbirds also have increased and new species are seen in areas where they had been lacking. The great blue heron has become a common sight around the farm ponds.

The completed Ischua Creek Watershed project is sure to produce an outstanding wildlife, nature, and conservation area.

Spoilbanks and Birdlife

Birds come back to Avondale with recovery of vegetation on reclaimed strip mines

By H. Granville Smith
Field Biologist, SCS, Columbus, Ohio

THE songbirds are coming back to Avondale, a reclaimed strip-mine spoil area in eastern Ohio.

The 3,500-acre Avondale area in southern Muskingum County is one of several large strip-mining areas owned by the Ohio Power Company. Coal from these areas is used to produce electricity for a large part of Ohio.

Strip-mining, of course, destroys the vegetation and therefore eliminates the wildlife. Luckily for the songbirds, though, Ohio Power Company doesn't leave the spoil areas "spoiled." The company has been a cooperator with the Muskingum Soil and Water Conservation District since 1946.

The company's conservation plan calls for replanting the spoil banks created in each year's mining operations. The tree planting mixture is one-third black locust; one-third soft hardwoods, such as tulip-poplar, sycamore, wild cherry, sweetgum, and red maple; and one-third climax hardwoods, such as oaks and sugar maple. Some volunteer trees have come into the stand, as well as some grasses, legumes, forbs, and shrubs.

About 25 percent of the land in the Avondale mine area has been strip-mined and planted. The unmined areas contained some woodlands, some brushy areas, and some open fields. Most of the open areas have been planted to red, white, and shortleaf pines.

To find out what this reclamation project was doing for the bird life, I made a field study on five selected areas. Four times—in December, April, May, and June—I walked a half-mile route in each area and counted the birds within 200 feet of the routes. In June, I made a nesting census.

Here are the results:

Area	Species	No.
3-5-year-old reclaimed	19	78
3-5-year-old unmined	39	287
18-year-old reclaimed	33	158
18-year-old unmined	39	215
Farm fence row	47	282

The fence-row and farmland habitat adjacent to the Avondale mine area contained the most species, probably because it provided the most diverse cover—a combination of pastureland, meadowland, cropland, farm woodland, and a ¼-acre marsh. The fence row itself was composed of 50-foot-tall trees and some brushy cover for about half of its length. The other half was open.

The June study showed that 11 species nested in the 3- to 5-year-old reclaimed area and 19 species in the 3- to 5-year-old unmined area. Among them were field sparrow, redwinged blackbird, indigo bunting, rufous-sided towhee, song sparrow, redeyed vireo, yellowthroat, and indigo bunting. A total of 25 species nested in the 18-year-old unmined areas, and 32 species in the farm fence row.

Green heron, redtailed hawk, and sparrow hawk were seen in the older reclaimed area in June. Their presence indicates that normal predator-prey relationships are now being established.

Flickers, hairy woodpeckers, and downy woodpeckers also were seen in the area. They perhaps were attracted by the presence of locust borers in the black locust trees.

Presence of roughwinged swallow and purple martin indicates that aquatic insects are being produced in the strip-mined ponds.

The Avondale story is being repeated in other areas of the Nation as conservation planning reclaims many acres of land that was disturbed during strip-mining operations. As vegetation develops, including valuable timber, a substantial wildlife population establishes itself. These wildlife and forest resources can provide needed recreation opportunities in addition to beautifying the land and protecting it from erosion. In another area owned by the company, camping sites are being installed for use by campers and fishermen.

Birds are already nesting in this strip-mine area, 3 years after planting on the left of the road and 5 years on the right.

Legends of yesteryear, hopes of tomorrow . . .

Ghost Ranch Museum

Natural areas, conservation exhibits are living textbook of the land

ABOUT 60 miles northwest of Santa Fe a highway sign draws attention to a picturesque 21,000-acre ranch-spread whose origins, the tourist learns, can be traced to Charles III of Spain.

It is "El Rancho de los Brujos" —The Ranch of the Witches.

Once an object of superstition and fear, the setting of range fights, and an area shunned by even the weariest traveler, the ranch is today an oasis for vacationers, a lesson in conservation, and a national conference center for Presbyterians and the site of the Ghost Ranch Museum.

Before the visitor a panorama of soil and water conservation unfolds, a monument to the vision and effort of men of the Charles Lathrop Pack Foundation, builders and operators of the museum, and others of Federal, State, and local organizations who helped them.

Soil Conservation Service technicians and supervisors of the Coyote-Canones Soil and Water Conservation District lent an early hand, helping to plan and install range condition plots and grass trials, earth construction, and other conservation examples.

Near the highway entrance is part of the work, a 10-acre display of the needs and treatments involved in the conservation job. The SCS shared the costs of this dramatic show.

The museum with its outdoor exhibits and trails is a walk through the ages, a picture window of a geologic past, and a vision of land use and conservation to come.

"Vivaron" Lives On

Legend has it that the first settlers in the canyons lived in terror at reports of a monster called the "vivaron"—a rattlesnake-type creature, according to the telling, about 30 feet long. Cowboys and sheepherders reported seeing it in the badlands not half a mile from headquarters.

Over the years the legend persisted as the land changed hands. Once the title, in a card game, went to a cowboy and his eastern bride who operated their new property as a dude ranch. Later the ranch was the site of a Civilian Conservation Corps camp and operated again as a real cow outfit, this time complete with a soil conservation management plan and agreement with the Coyote-Canones district.

The story of the "vivaron" gained credence when a group of university paleontologists discovered—in the same area where the "vivaron" once had been "seen" —the skeleton of a phytosaur coiled and giving the hint of movement as the bones gave off heat waves in the sun. The skeleton was excavated and displayed in the American Museum of Natural History in New York.

Today the fossils of millions of years ago are housed in the Ghost Ranch Museum building, near the place of their discovery. In the

North of Ghost Ranch headquarters hovers Huerfano mesa, "the Orphan," a remnant of the area's geologic past, a breath-taking backdrop for the conservation scene (opposite).

Here visitors to Ghost Ranch leave their automobiles and walk a path leading to unforgettable glimpses of the works of nature.

room are recessed cages of live kangaroo rats, tarantulas, turtles, lizards, snakes, and other examples of native wildlife. Outside, a circle of "natural" cages houses bigger species including the wildcat, cougar, bear, and fox. Beyond are the ecology exhibits, natural areas, trail sites, and the story of nature that can only be properly told in the out-of-doors.

According to Arthur N. Pack, chief executive of the Pack Foundation, Ghost Ranch provides a view into one of the most unusual areas in an unusual State.

"It is a focal point—a borderline between the legends that stretch back through centuries and the hopes that reach into the far years ahead," Pack says.

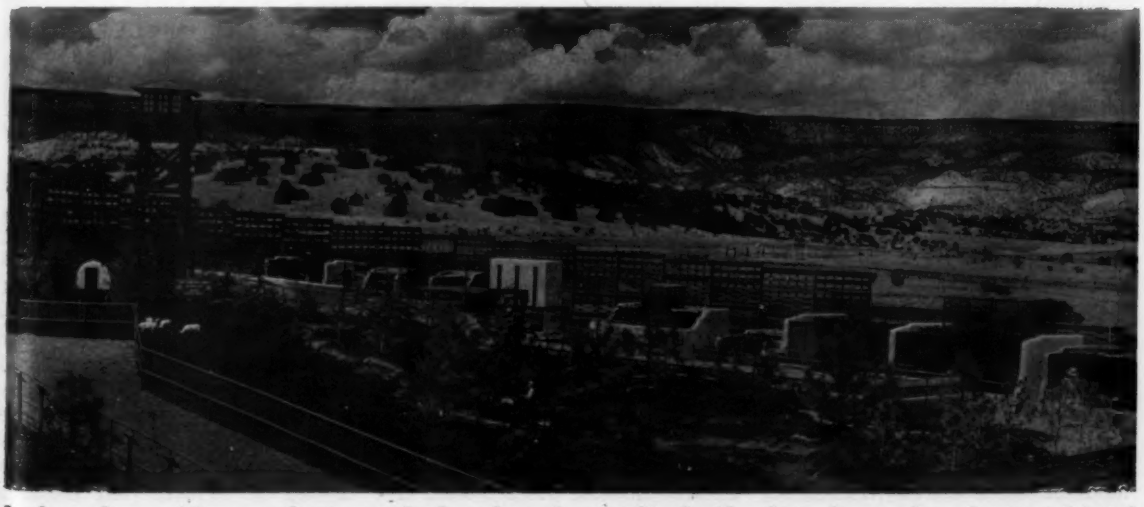
Pack and his wife acquired the ranch in 1935 and dedicated it 20 years later "to perpetual good use in the Christian cause." They helped establish the church conference and broke ground for the interpretive nature center in April 1959. The Packs were visited by nearly 4,000 persons that summer, folks who just wanted to see what was going on.

"During Construction"

Attendance has grown in spite of signs which say: "Open for your enjoyment during construction." The signs will remain because in Pack's thinking the teaching job will never be finished. Each year will bring changes, new exhibits, and improvements.

In 1964, 90,000 visitors stopped before the Labor Day weekend to look and learn. No one paid admission, but many gave generously to help carry on the work.

William H. Carr, director of the center and the man who conceived many of the living museum's installations, says building an appreciation of nature and explaining its meanings develops a "will to care" among good citizens. The aim at Ghost Ranch is to show that contrary natures, geographic and human, can be harnessed to restore land to its original usefulness and beauty.



In the enclosure visitors see the trees and other plants that, combined with other values, make a forest useful and attractive. Beyond are the animal displays and, still farther, the pinyon-juniper slopes.

Carr brings long experience in conservation teaching to the ranch. He spent over 40 years in the profession. He was nationally acclaimed for his work at the Arizona-Sonora Desert Museum in Tucson and at other centers including the Bear Mountain Trailside Museum in New York.

Selling Conservation

According to Carr, the museum is a "neon-sign" to gain attention. "What we are selling is conservation. We show animals and use exhibits as attention getters to tell the story of nature and to encourage people to take care of what nature has given them," he explains.

On the "Walk Through the Ages" visitors use mounted telescopes to see geologic times reflected in the distant 1,000-foot sandstone cliffs. They touch nearby samples of the rocks, read clever signs, and listen to explanations over public address systems. Questions are rewarded by direct answers from trained staff members.

Here an exhibit shows erosion in action with push-button rain falling on various kinds of terrain. Another reveals how the land once was, how man has helped cause deterioration, and how it might be reclaimed through conservation practices. There is a model forest of several acres, complete with campers, lumberjacks, and fire control on a half-life-size scale. There are grass study plots and a walled prairiedog town. A "Talking Beaver" relates his conservation role in Spanish and English.

More than 50 schools within 125 miles send children to see the exhibits and supplement their classroom learning. Many students return with their parents. Each year the number of participating schools grows.

The arroyo work—control of the big gullies—is one of the most graphic of the demonstrations. Mounted telescopes are trained on distinctive soils, plants, erosion, and control features. Soil monoliths, the work of SCS and New Mexico State University soils experts, are glass-cased. Speaker systems explain problems and solutions at the visitor's touch.

At this range site and condition plot installed by the SCS and conservation district, visitors may view the plants and conditions that have important meanings for the livestockman and others concerned with the conservation of nature's resources.

All this is part of a growing watershed demonstration which will eventually show peak-to-river sequence beginning with the forest and followed by the upland range, irrigated lands, dams, multiple-use areas, and the many other facets of conservation practice. Half-size farm and ranch improvements and equipment will complement the area.

Watershed Demonstration

Under the ramada—a shelter for about 50 people at a time—a scale model is planned of the Santa Cruz Watershed project being developed with the aid of Public Law 566. This will help visitors visualize the actual watershed they see in the conservation area's telescopes.

Each year the Ghost Ranch Museum comes nearer being "the living textbook whose purpose is to teach a lesson in the ecology of the Southwest,"—to use Arthur Pack's words.

Beyond the museum and nature center complex, conservation takes on broader meaning on the ranch itself. One of these is the development - management - improvement job necessary to the modern operation of a 22,000-acre ranch where rainfall averages as little as 10 inches annually.

Grassland management on five principal range sites is of paramount importance. Structures are needed to counter past mistakes and to prepare for the future.

Debris basins, irrigation of supplemental hay fields, range pitting, evergreen tree plantations, land leveling, reseeding, and crop and livestock adjustments are all part of the conservation plan signed by the Church Board of Christian Education and the Coyote-Canones district and being put into effect by the ranch manager. Success of the work is indicated by an advance of at least one condition class in many range areas.

The ranch improvements, demonstration programs, and attraction of tourists and students all dovetail into the Resource Conservation and Development Project proposals of Rio Arriba County and adjoining areas.

Throughout the Nation

The influence of the conservation work on the ranch is extended throughout the Nation through the educational efforts at the conference center.

Dormitories and cottages there accommodate more than 5,000 guests each year from all parts of the country. While most visitors are church-affiliated, many others use and enjoy the facilities. Among them are participants at soil and water conservation district zone meetings, technical workshops, and scientific society gatherings. Several tours scheduled in advance of Soil Stewardship observances have joined resource conservationists and church leaders.

Youngsters at the summer camp programs are housed in a "Tepee Village" and true Navajo hogans alongside the Arroyo del Yeso. The old ranch bunkhouse, saddle rooms, and the Cottonwood Adobe provide up to 285 visitors at a time with a touch of yesterday and a respite from a busy world.

Nearby, the Spanish-styled Ghost House, now 135 years old, stands as a reminder of the first settlers to call this beautiful valley home.

Those who visit Ghost Ranch scatter to their homes, churches, and communities thousands of miles apart, taking with them memories of the grandeur of the terrain, the charm of the historic valley communities, and a new sense of the gifts of nature.

Vacationers, travelers, church people, scientists, and school leaders write back to say the enriching experience of their visit was added to immeasurably by the efforts of Arthur Pack and William Carr and "A Walk Through the Ages."

New Award Program Supports 4-H Club Conservation Project

A new national 4-H Club program in conservation of natural resources offers county, State, and national incentive awards to 4-H members who excel in the project.

The awards will be administered by the Cooperative Extension Service through the National 4-H Service Committee. They will consist of six college scholarships of $500 each, a trip to the National 4-H Club Congress for the winner in each State, and four medals of honor in each county.

"Effective conservation will be attained only as our people appreciate its importance and develop an understanding of effective and practical conservation measures," said Lloyd H. Davis, administrator of the Federal Extension Service, in announcing the awards. "Herein lies an opportunity for 4-H leaders to make a significant contribution, not only to youth through assisting and guiding their training, but also to the longtime welfare of the Nation."

The new 4-H program will be based on the recently published 4-H Leader's Guide, "Conserving Our Natural Resources," which was prepared cooperatively by the Federal Extension Service, Soil Conservation Service, Forest Service, and Fish and Wildlife Service.

This publication provides for the first time on a national scale a comprehensive guide dealing with conservation of our natural resources and their interrelationships. Regardless of whether the 4-H boy or girl's natural interest is in soil, water, grasslands, forests, or wildlife, the guide provides information enabling the user to relate each resource to all the others.—E. J. WILLIAMSON, *Extension Soil and Water Conservationist, Washington, D. C.*

Study Area Wins SCSA Merit Award

The West Arapahoe Soil Conservation District of Colorado received the 1964 Merit Award of the Soil Conservation Society of America and earlier the Merit Plaque of the American Association of Conservation Information for obtaining 2,000 acres of prairie land and establishing the Plains Conservation Center.

This natural study and exhibit site is within hiking distance of metropolitan Denver and only minutes away from schools and suburban developments. Plans for the center were drawn up by more than 300 individuals and committees representing both urban and rural interests.

The National Audubon Society, the Soil Conservation Service, and Colorado State University provided planning assistance. Membership drives to encompass the entire State are timed for late 1964 with an outdoor conservation education program aimed at the area's 225,000 schoolage youngsters beginning early in 1965.

Kindergarten pupils study a box turtle near the "central Jersey stream," part of the school's outdoor lab.

Outdoor Laboratory Builds Interest in All Studies

By Erling W. Clausen
Superintendent of Schools, Freehold, N. J.

NATURAL areas are becoming an accepted part of school life in the United States.

Because they stimulate interest not only in the sciences but in all studies, because they engender fresh enthusiasm among students and teachers, many school boards include natural areas in their plans for new buildings. That means that certain parts of the school's grounds are set aside and kept intact, out of the path of bulldozers.

The natural areas then become an actual part of the school—an outdoor laboratory in which the students can see, feel, hear, smell, and even taste what they study in the classroom. The advantages of such a laboratory are obvious.

But many if not most of existing schools were built before the value of natural areas to students and faculty had become evident. Some school boards have tried to overcome this deficiency by acquiring tracts of land in their natural state. Generally these tracts have the disadvantage of being miles from the school. Use of them usually amounts to no more than a quick tour. To render its fullest value, a natural area must be part of the school grounds so that it can be used quickly, easily, and at will by students and teachers.

Manmade Study Area

Does this mean, then, that nothing can be done for schools that were built without preserving part of the grounds as a natural area? No, I don't believe so. The handicap can be overcome by establishing an artificial, manmade "natural" area. It can serve almost as well as a genuine natural area.

That has been our experience at the Intermediate School in Freehold, N. J. We have established a miniature, simulated "natural" area that has proved so successful a part of our teaching process that we are planning to enlarge its scope—by degrees.

Naturally enough, the idea for our outdoor lab came from Neal Munch, a professional and dedicated work unit conservationist for the Soil Conservation Service in the Freehold Soil Conservation

Eighth grade students identifying plants, checking rain gage, and measuring tree growth in the "pine barrens of south Jersey" part of the outdoor laboratory.

District. At the time, he was a member of the school board, later its president. In blueprinting the outdoor lab, he had the help of Marvin A. Clark, Monmouth County agricultural agent, and Raymond Korbobo, extension specialist in landscape design at Rutgers University. The New Jersey Division of Fish and Game has also been an interested helper in the development of our outdoor lab from the beginning.

The planners set up the outdoor lab between two wings of the school building. A high wire fence protects the area at the open end.

Resource Areas Shown

An advantage of our manmade "natural" area is that it represents various land resource sections of the whole State. The actual soil and vegetation were brought from their natural areas. In carrying out this chore, on his own time and after school hours, Mr. Munch was assisted by some of our older students and Harold G. Smith, our 8th grade science teacher.

Begun in 1962 before I became school superintendent, our outdoor lab now consists of miniature reproductions of several New Jersey land resource areas, 200 different plants, 28 types of animal life, and 2 ponds.

From kindergarten to 8th grade, students have the opportunity to observe turtles, frogs, rabbits, fish, water and land insects, and microscopic life. Other objects of study are the many birds attracted to the area by feeders and houses built in the school shop for their use.

Firsthand Knowledge

"Without the outdoor lab," Mr. Smith points out, "the students could obtain their knowledge only from books and similar material. That's not enough. With only book knowledge, a student could get lost, literally and figuratively, in a genuine natural area. Here it's just a step to our outdoor lab where the students can learn things first hand, or confirm what they have read or heard in the classroom. An outdoor lab has a tremendous potential as a teaching tool. Ours will be used to an increasing degree as we enlarge its scope."

Gail Furniss, 8th grade, examines a robin's nest in a red cedar tree in the "central Jersey" section of the outdoor lab.

In the outdoor lab, our students learn about the relationship of plants and animals to their environment. The conservation of natural resources is an important part of the general study. Specific subjects include the study of plants, such as the identification of flowers, shrubs, and trees, and of insect damage to plants. Long-range projects include the study of erosion and the rate at which plants grow. Observing erosion at close range, the students can then understand how rain falling on bare land can wash priceless topsoil from unprotected yards and farm fields into reservoirs, streams, and harbors.

It took only about $500 cash outlay to establish the outdoor lab. The $300 fence was the largest item. Sand cost about $25 and plants about $30. Most of the sand and many of the plants, however, were obtained free for the digging.

◆

Moisture in depths down to 4 feet should be considered in planning fertilizer rates for most soils.

◆

Grassed waterways carry flood runoff safely from terraced and contour-cropped fields and from roadways and airports as well.

Conservation, Your Community, and You

Scout Jamboree theme told to 50,000 boys in multiple resource exhibit areas

SURROUNDED by an authentic setting of American history and heritage, Boy Scouts at the Sixth National Jamboree at Valley Forge July 17-23 saw how their future community life and welfare depend largely on conservation of all their natural resources.

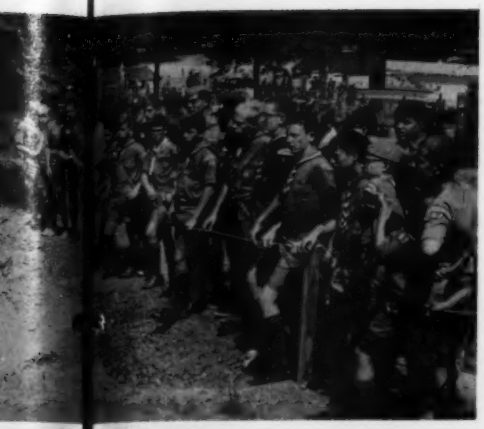
Upwards of 52,000 Scouts, Explorers, and Scout leaders and officials gathered at the historic 1777-78 Continental Army campsite for their once-every-4-year "Olympiad" celebration. They came from every State and 46 foreign countries and encamped on the 2,033-acre Valley Forge National Park near Philadelphia, Pa.

Three duplicate conservation

Historic Valley Forge Park became Pennsylvania's eighth largest population center during the Jamboree (below).

A cut in Valley Forge's hallowed soil (upper c.) helped William L. Perry, National Park Service, explain to the gathered Scouts the importance of conserving the thin layer that supports life.

A model of a small watershed (lower c.) illustrated how all resources are related in a community. Forester Paul H. B. Glenny, of Pennsylvania Game Commission, explains.



In the freshwater resources station (above), a series of rock and log structures showed how a flowing stream is made to behave for the benefit of fish and fishermen. This pool brings pleasant reflections to (l. to r.) J. K. Stern, national councilman, BSA, and Scoutmaster Mark Geeslin and Explorer Alan Dunlap of Jayton, Tex.

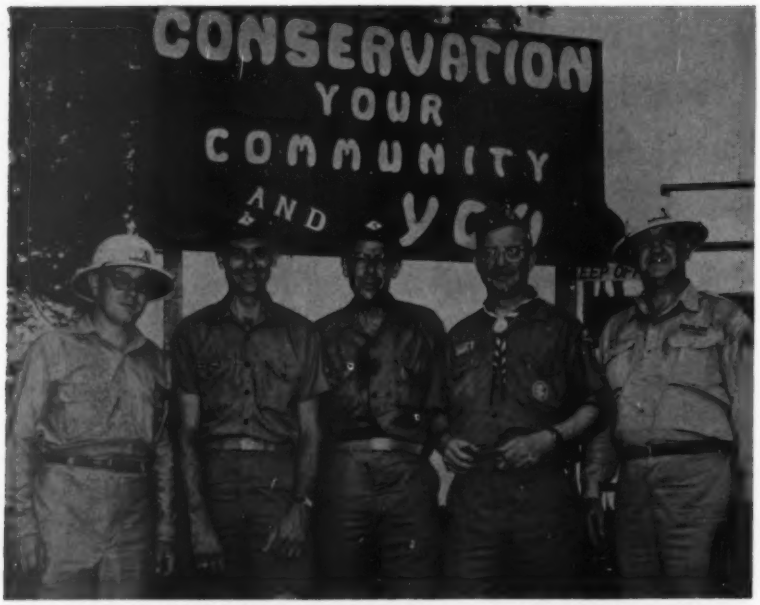
SCS Administrator D. A. Williams (l. foreground, below) with other conservation leaders reviewed the exhibits with approval.

reas, geared to emphasize the rowing demands being made on ur earthly resources in the midst rapid space-age advancements, ere constructed at the Jamboree acquaint Scouts with the full nge of resource management.

Each site had 10 demonstration ations designed to graphically lustrate how weather, geology, il, fresh water and marine re- urces, woods, grasslands, fish d wildlife, watershed protection, d backyard conservation were closely related to modern, pro- essive community life.

Several local, State, and Fed- al agencies, including the Soil nservation Service and Forest rvice, combined their special ents to make the unified Jam- ree Conservation Shows.

Scout troops were given hour



Participants in the Jamboree represented many youth, education, and conservation organizations. Among them were (l. to r.) Wayne E. Maresch, SCS work unit conservationist, Lancaster, Pa.; Walter J. Wenzel, assistant, and Ted S. Pettit, director of conservation and camping, BSA; Robert M. Eisenberg, director of rural services, National Education Association; and Adrian C. Fox, educational relations specialist, SCS.

and a half guided tours through the conservation areas by specially trained technicians from the participating agencies. Two-man teams from New Jersey and Pennsylvania and a three-man team from New York represented the SCS as conservation guides. Adrian Fox of the SCS Information Division, Washington, D. C., assisted by Wayne Maresch, Work Unit Conservationist from Lancaster County, Pa., headed the SCS Jamboree task force.

Each man guided 2 or 3 groups of 40 to 80 Scouts a day through the conservation demonstrations. Nearly 3,000 Scouts toured each conservation site daily. The grand total visiting the combined show areas was more than 48,000, according to Ted S. Pettit, director of conservation, Boy Scouts of America, and Walter J. Wenzel, his assistant.

In this share-the-conservation program, SCS provided 2 of the 10 demonstration stations at each site. One of these, the first stop on the conservation tour, was an exhibit on soils. Here, a 3- to 4-foot-deep walk-by soil profile pit was dug in the hallowed Valley Forge earth in each show area. This was used to show Scouts how the soil looked where they stood.

Augmenting this soil profile was a large panel with seven monolith soil profiles. Each of these showed exact profiles from Washington, New Mexico, Wisconsin, Nebraska, Georgia, and Vermont. A large map of the United States set above the monoliths helped locate the specific sites. Pointing to variations in these profiles, guides were able to show the Scouts how soil formation varies between deserts, prairies, and woodlands.

Further along the conservation tour was a 5 by 9-foot watershed model designed to illustrate how many American communities are solving flood problems and improving living conditions through watershed protection projects.

The models illustrated how upland conservation measures, combined with well-planned floodwater-retarding dams and channel improvements, end flood threats, protect soil and water resources, and provide a community with municipal water supplies, fish and wildlife improvements, irrigation water, and recreation areas.

Here, as well as at other demonstration stops on the conservation tour, community conservation was emphasized.

As the week-long 1964 Jamboree ended most of the Scouts had passed through the conservation areas. By the thousands, they had seen and learned important facts about conservation of their community resources. They went home armed with knowledge of the need to arouse the interest of their friends and neighbors in community conservation projects.

And as their efforts—small or large—become a reality, Scout leaders and conservationists are sure that Valley Forge will have added another page to American history and helped strengthen our heritage.

Biologists Sought In Outdoor Recreation

College graduates with training in biological sciences are in line for greater employment opportunities resulting from the upsurge in demand for outdoor recreation.

The Bureau of Outdoor Recreation estimates that by 1968 Federal and State agencies will hire about 50 percent more professional personnel to work in outdoor recreation jobs.

College graduates with biological science training will be in greater demand than any other group for employment in recreation with Federal and State agencies.

In 1963 Federal agencies reported 4,489 full-time professional employees and 38,933 employees whose duties included part-time outdoor recreation responsibilities.

Quality in Outdoor Recreation

By Frank C. Edminster
Resource Development Division, SCS, Washington, D. C.

QUALITY is an important watchword in outdoor recreation. The Soil Conservation Service, as a technical agency charged with guiding recreation development on private land, must build quality into the specifications for recreation facilities as it has into other land use measures.

Quality in the outdoor recreation *experience* is the object; quality in the *development* and *management* of outdoor recreation areas is the means of achievement.

Every American who has gone to the country seeking pleasure through the enjoyment of beauty, seeking healthful relaxation through outdoor activities, has experienced the disappointments of desecrated scenery, substandard facilities, and overdeveloped "recreation" areas.

Excesses of billboards; hillsides covered with rusting auto carcasses; honky-tonk roadside businesses with gaudy, flashing signs and noisy juke-boxes; rutted, muddy, or dusty morasses that make-do as auto parking areas—these are a few of the scars that mar our countryside.

Naturalness First

Naturalness is a quality that should be sought first for rural areas, especially those with good scenic attributes.

Naturalness in this context does not mean untouched nature. It does mean unabused nature—a landscape without the scars of accelerated soil erosion, without the evident effects of poisons applied to vegetation. It means a landscape having an attractive balance of the kinds of vegetation that grow well there—grasslands, woodlands, hedgerows, and tilled fields, all neatly tended. It means clear streams that flow normally between grassy or wooded banks, and silt-free impoundments dotting a well-kept landscape.

When the recreationist arrives at his destination, he may be in for more disappointments. How could he have known that the advertised "beach" was an unimproved, stony shore? That the "delightfully airy cabins" are poorly kept? That the walking trails are filled with mudholes and lined with poison ivy?

The reasons for these shortcomings are varied and, regrettably, often deeply seated in our customs. Bringing about needed changes will, therefore, not come easily. Regulation through zoning and licensing, no doubt, will be required to reduce the undesirable placement of billboards, auto graveyards, and the like. Community pride will have to be developed to overcome many of the careless habits of individual citizens and small businessmen.

As rural America becomes more and more interrelated with urban America, matters of appearance and quality of recreation areas are of mutual concern. They affect the *use* of resources, and they affect the *income* of farmers and other rural residents.

The Soil Conservation Service is concerned with these effects on resources and people. More important, SCS people helping landowners plan recreation developments have an opportunity and responsibility to influence favorably the use of resources and the looks of the scenery.

Community Planning

Several approaches promise to bear fine fruit in solutions to some of these problems.

The improving competence of State highway agencies will have its effect on the secondary road systems.

Coordinated resource planning and development, as in watershed and RC&D projects, can and should include the kinds of things needed to make rural areas truly "America the Beautiful." Community planning to provide for open space in urban development and preserve natural areas in the rural scene is gaining acceptance.

The citizens' groups having special interests in outdoor beauty—Audubon societies, women's clubs, civic clubs, chambers of commerce—can play their parts in resource development as well as agencies and groups having other interests.

Our work in broad resource planning comes to fruition in specific operations: A roadside erosion control and revegetation job with a road maintenance agency; a zoning rule relating kinds of use to kinds of land; construction of a reservoir with its attendant public recreation facilities.

Probably most important of all is the service made available to private land owners and operators. Here we can furnish sound guidance to help them establish and operate recreation enterprises of high quality.

If picnic tables are needed, designs can be recommended that will stand hard use for many years, not deteriorate quickly into junk.

If a water supply is to be built, assistance in choosing appropriate facilities will assure that they not only meet public health standards but also fit well into the landscape.

Our sound advice will help them build quality recreation enterprises that will attract a good clientele. Everyone in the professional field who is offering recreation service needs continually to emphasize the importance of quality in the facilities and in their operation.

Quality pays; substandard operations are doomed to failure.

Here's how to—

ATTRACT BIRDS AND OTHER WILDLIFE TO RURAL AREAS

By Roy A. Grizzell and Verne E. Davison
Field Biologists, SCS, Little Rock, Ark., and Portland, Oreg.

A windbreak with herbaceous undergrowth provides nesting places and shelter for many kinds of birds.

SONGBIRDS and other wildlife bring joy to people living in rural areas. Many operate feeding stations around their homes for birds. Because of their surroundings, rural residents have an advantage over city dwellers in managing their land to attract a wide variety of birds and other wildlife.

People interested in attracting wildlife to their property can begin by sizing up the availability of food, cover, and water, which are the basis of all wildlife management. Of these, food usually is the most important.

Here are some specific suggestions that you can use if you have a piece of land under your control, whether it be a rural retreat or a working farm or ranch:

Things to Do

First and foremost, be a good conservationist. Eroded soil produces no food, no cover, and only muddy water when it rains. Can you see from one end of the property to the other? If so, you need windbreaks, shrubby fence rows, or a woodlot. What you already have will determine what else you need.

Develop a Food Supply

You will want a feeding station near the house. Locate it so you can observe the birds.

Include one or more suet baskets tacked onto a tree. If no trees are present, plant one or erect a post to serve as a substitute.

Obtain or build a sunflower dispenser. A plywood box with a small hole in the bottom, or a coconut cut in half and held together by three wires, is satisfactory. Adjust the opening to permit titmice, chickadees, nuthatches, and other small birds to obtain the sunflower seeds.

Also provide a tray-type feeder or dispenser. If you don't want to build the feeders yourself you can purchase them from advertisers in outdoor magazines.

You can feed any of the recommended birdseed mixtures or you can buy scratch feed from a farm supply store. Supplement these basic foods with raisins to attract the fruit eaters (mockingbirds, brown thrashers, and the like) and nuts for such birds as cardinals, finches, and bluejays.

Even more important in rural areas is food produced by planted crops and by shrubs, vines, and trees. Here are some ideas:

Plant a quarter-acre food patch on each 20 acres of land. Make it a cafeteria. Include a millet, such as browntop, and several rows of lespedeza. Other good foods are sunflowers, wheat, and corn.

To combine cover with food you can plant a multiflora rose fence. Use the thornless type of rose in urban areas or on small lots. Multiflora rose can become a pest where there is idle open land nearby. Rose hips are choice food for mockingbirds and cedar waxwings. They are fair for cardinals, robins, and a few other birds, especially in winter when snow covers the ground.

For the fruit eaters plant several mulberry trees. Locate them at some distance from the house to avoid stains on clothes, floors, and cars. Mulberries are among the first fruits to ripen in the spring and furnish choice foods for bluebirds, bobwhites, indigo buntings, catbirds, great-crested flycatchers, bluejays, kingbirds, mockingbirds,

Baltimore and orchard orioles, robins, summer tanagers, brown thrashers, wood thrushes, towhees, vireos, cedar waxwings, woodpeckers, and squirrels.

One of the next fruits to ripen is black cherry. Songbirds flock to ripening cherries just as they do to mulberries.

Other fruits that will attract most of the fruit-eating songbirds are blackberry, wild grape, elderberry, cherry elaeagnus, dogwood, autumn-olive, blueberries, and pokeberry.

For the nut-eaters there are many good choices. To produce the maximum amount of food, the trees need sufficient growing space. Sometimes it is necessary to thin them or remove competing species.

The various oaks are among the best producers. Other important nut-bearing trees are beech, chinquapin, hickory, pecan, various species of pines, and walnuts. Birds do not normally crack hickory nuts and walnuts, but squirrels and other animals do. Birds then feed on the bits dropped by the animals. If you will gather nuts and crack them, the birds will flock eagerly to the site.

Rural land can be managed for insect-eating birds by providing well-kept lawns around residences, well-fertilized and mowed pastures, brushy fence rows, and a variety of tree species in farm woodlands.

Cover

A variety of kinds of cover is needed. There should be nesting sites during the summer, escape and roosting cover, feeding cover, and vegetation to provide shelter from winter storms. All are important.

Windbreaks commonly supply both cover and food for resident and migrant songbirds. A variety of species are better than just one or two.

Water

During the past 20 years more than 1¼ million farm ponds and more than a thousand floodwater-retarding structures have been built in the United States. Almost without exception the ponds and lakes attract songbirds as well as waterfowl and shore-birds. Martins and swallows capture insects over the water. Doves and other birds come to drink. A willow tree or cattail clump may harbor a nest of yellow warblers or redwing blackbirds. One of the most interesting places of all to enjoy and watch birds is at or near a pond or lake.

Artificial Attractions

Bird boxes add to nesting sites in rural areas. Bluebird boxes nailed to fence posts will substitute for natural tree cavities, often being used by starlings. Boxes with small openings give nuthatches, chickadees and titmice a chance.

Around the edges of ponds and lakes you can erect martin houses and wood-duck boxes. If you have raccoons consider using the duck box developed by the Patuxent Research Center of the Fish and Wildlife Service. It effectively prevents predation by raccoons, squirrels, snakes, and the like.

Squirrel boxes will substitute for natural tree cavities where mature and overmature trees are lacking.

Platforms erected over water will be used by mallards, black ducks, and geese in the northern parts of the United States.

Conservation farmers and ranchers, as well as nonfarm rural residents, can use these ideas to make their land more attractive for birds and wildlife and help preserve this important heritage.

A field planting of tickclover, proso millets, Texas millet, cowpeas, sunflowers, guar, and soybeans produces wildlife foods.

Open Windbreaks

Forester John J. Zaylskie of North Dakota State University Extension Service reports that comparatively open single-row windbreaks distribute snow more evenly on cropland than dense or multirow barriers. Evenly distributed snow builds up soil-moisture reserves over a large width of field.

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Farm ponds have many uses—to water livestock, for fire protection, and to provide fishing and other recreation.

Gravity Flow Sprinkler System For Foothill Irrigation

A UNIQUE system that has turned foothill irrigation from a problem into a blessing is rapidly gaining favor in the Teton and Star Valley soil and water conservation districts in the mountain valleys at the foot of the Grand Teton Mountains and may well be adapted to similar terrain throughout the country.

The gravity flow sprinkler system makes use of the altitude of the water source to operate the sprinkler heads and distribute the water. It has all but eliminated the many irrigation problems in foothill irrigation and has created so many new advantages—including economy and dependability—that local Soil Conservation Service people and the sprinkler companies have all they can do to keep up with installation orders.

In the Alta area of the Teton district on the Wyoming-Idaho border, the system is being used by 45 farmers—nearly all the irrigators—on 5,000 acres. Another 30 operators use the system on 3,000 acres in the nearby Star district, and applications for installation are coming in each year from smaller communities throughout the Teton district.

Irrigation in these valleys had been most unsatisfactory before the use of the gravity flow sprinkler system. Water was carried through open contour ditches. The water-loss was extremely high, maintenance costly and time-consuming, and the waterflow difficult to control. There was usually a shortage during the peak periods of use—when the water was needed the most.

With the open ditch systems it was almost impossible to efficiently irrigate every corner of every field. To do so, an intricate system of ditches was needed, and labor requirements were very high. This not only required cutting up good farmland but hampered farm operations and required long hours of maintenance work.

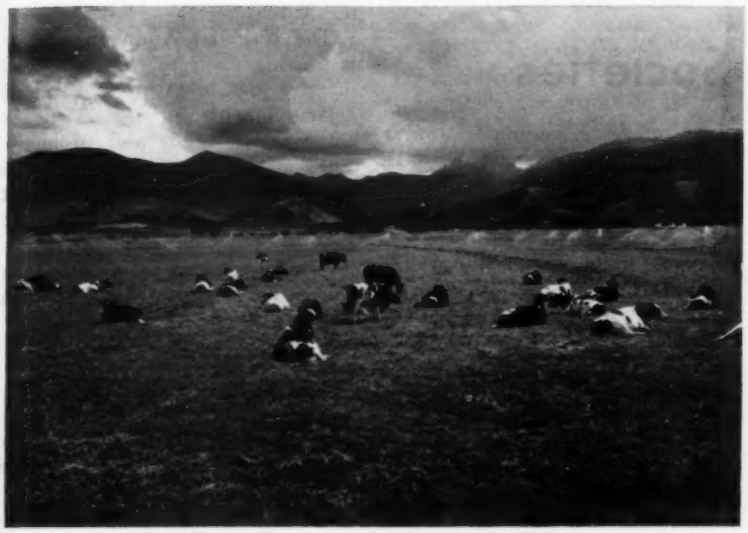
The small family farms in the area and the average production yields of the soil would not justify the installation of regular sprinkler irrigation systems with power driven pumps.

The area was ready-made for the gravity flow sprinkler system. No one is quite sure who first thought up the idea, but from 1958 on, when the first ones were installed in the Alta area, the SCS took the leadership in their design and installation. Harold Birkey, SCS area engineer at Jackson, Wyo., has assisted work unit personnel with these systems from the beginning. Sprinkler companies, in meeting in Wyoming, Idaho, and Utah, have worked closely with SCS technicians on the design specifications, and capacities.

The system needs an operating head, or elevation distance, of from 90 to 100 feet or more above the area to be irrigated. SCS technicians compute the water-holding capacity of the soil and the water required to grow crops under normal conditions. With this information, plus the size of the field to be irrigated, steepness of the slope, and other data, the size of the pipe and the design of the system can be prepared.

Waterflow is controlled through concrete inlet structures at the origin of the water. Individual cutoff valves permit easy operation. The water, when the system is in operation, flows down the steep hill through an underground pipe into another pipe system bordering the field. Sprinkling is done by means of light weight aluminum pipes and rotating sprinkler heads that can be moved easily and quickly

Pipes for gravity sprinkler irrigation systems in foothill country of the Teton SCD in western Wyoming are being installed.



The gravity flow sprinkler systems used in western Wyoming have brought many benefits to the ranchers and farmers in the area.

from place to place. The pressure from the gravity flow down the steep hill permits equal flow through the pipe's length and operates the sprinklers.

Low cost and high efficiency are perhaps the two top advantages of the system. Cost of installation runs slightly more than $100 an acre on the average. Group installation naturally makes it cheaper. The usual group runs from 2 to 6 operators, although it has run as high as 12 in the Alta area.

Financial assistance is given through Government cost-sharing programs with the installation of complete conservation planning, including water management, crop rotation, and other measures.

With gravity flow sprinkler irrigation, wasted acres are kept to a minimum. All corners of the field receive equal moisture, and as much as 10 percent of the land once used for ditches under the old system can be returned to production.

Technicians estimate that production has increased by 200-300 percent and even more by operators who have had the system in at least 1 full year. With this and other improvements, it pays for itself within a short time.

In addition to these and other benefits, the system has eliminated the danger of erosion and ended the constant battle the farmers used to have keeping down the weeds along the old irrigation ditches.

Typical of the small operator benefiting by the gravity flow sprinkler irrigation system is Elwin Schofield, who operates 200 acres near Alta, and who, like most of his neighbors, diversifies his enterprise with alfalfa, small-grain, and irrigated pasture for a 67-head Holstein dairy herd and a few yearlings. Schofield admits that he was "hard to convince," but that now he is "completely sold" on the gravity flow sprinkler system.

He said the year before his system was installed in 1958 he had to buy 90 tons of hay but hasn't had to buy any since.

He now is able to keep his yearlings an additional 4 or 5 months, adding between 300 to 400 pounds to their market weight and at least $75 additional profit per animal to his pocketbook.

Schofield said he cut 200 tons of hay this year. The second crop got wet just before cutting so he decided to use it for pasture. He says he is able to use every acre of his farm with the gravity flow sprinkler system, giving him at least 10 percent more acreage, and about two to three times more production.

"That's without fertilizing" he says. "Heaven knows what I'd get if I fertilized. I just don't need to."

Schofield estimates he saves another $300 or so a year in labor costs. He said it was necessary to hire an irrigator at a cost of about $120 a month.

Now he says that he, his two young daughters, and his son can move all four of the portable aluminum lines in an hour and a half.

"Then the job's done, you can go off and forget about it," he said.

Secretary Establishes Research Committee

Secretary of Agriculture Orville L. Freeman has set up an Agricultural Research Planning Committee to assure continued cooperation between USDA and other agencies in planning and coordinating agricultural research programs.

The Secretary said there has been a steady increase in public support for agricultural research through the years. Today the ratio between Federal and non-Federal sources of funds for agricultural research is about 60 to 40.

Membership of the body includes the director of science and education, USDA, as chairman; six representatives of State universities and Land-Grant colleges; six representatives from research agencies of the Department; a member nominated by the National Academy of Sciences and one by the Office of Science and Technology, and a USDA official as vice chairman.

Natural History Societies

National Aububon Society Serves Growing Interest in Nature

By John Vosburgh
Editor, Audubon Magazine

THE National Audubon Society, which holds its 60th annual convention in Tucson, Ariz., November 7-11, serves a growing public that finds the study and appreciation of nature a major source of outdoor recreation.

The Society's extensive influence is far out of proportion to its membership of 44,000—a figure which has been steadily increasing. There are now 107 branch societies and 241 other affiliated groups in 50 States.

In its 1962 Report to the President and Congress, the Outdoor Recreation Resources Review Commission estimated 18 million people of 12 years of age or older took part in nature or bird walks during June-August 1960. By 1976 this figure will reach 27 million, the report said, and by the year 2000, 49 million.

The National Audubon Society states its philosophy as the belief "in the wisdom of nature's design" and pledges vigilance to protect nature's resources. Its long-standing authority and leadership in the study and protection of birdlife now extends with equal emphasis to all forms of wildlife, plant life, land use, water, wilderness, and scenic areas.

As befits the first national organization to establish a wildlife sanctuary (in 1902 by the forerunner of the present organization), the Society now provides warden protection to about a million acres of wildlife land. It sends 35 naturalist-photographers annually to more than 200 cities in the United States, Canada, and the West Indies to present wildlife film lectures. Audubon Junior Clubs have enrolled more than 11 million young people since 1910.

The society publishes: *Audubon Magazine,* now in its 66th year, *Audubon Field Notes,* and *Audubon Nature Bulletins.* It distributes nature films and photographs, conducts wildlife research, operates a service department of educational aids and nature items, counsels communities on starting nature centers, and maintains 5 large centers of its own as well as 4 summer camps that have been instrumental in educating some 10,000 nature leaders since 1937.

The interest in birdlife alone is pressing the Society's information services.

Allan D. Cruickshank, the author and bird photographer, recently estimated that "more than a million people in the United States and Canada enjoy birdwatching as a sport or as part of scientific projects."

This is considered a conservative estimate, applying only to the most serious birders who compile life lists and take field notes.

John K. Terres, Nature Editor for J. P. Lippincott, publishers, estimates that "at least 10 million people in the United States maintain a definite interest in birds." He bases this on letters from readers of his bird and nature books, and on other indices.

Advertisements for a line of birdhouse kits which appeared in magazines last spring produced half a million orders. Even well after the nesting season, the manufacturer was sending out at least 1,000 kits a week in midsummer.

The burgeoning interest in nature and related outdoor activities is also reflected in the 12,271,091 circulation of 17 conservation-related magazines. A recent survey showed a circulation of 472,808 for 30 nongovernment conservation magazines.

The National Audubon Society is gearing itself to cope with this massive turn to nature and related activities with all the attendant conservation needs and problems. The 93 percent increase in the number of nature and bird walk enthusiasts predicted for 1976 poses a challenge to nature organizations even more formidable than the wilderness presented to John James Audubon.

Regional, Local Groups Have Diverse Programs

By Shirley A. Briggs
Editor, Atlantic Naturalist

The number and diversity of conservation and natural history societies in North America reflect the growing interest in knowing more about our natural world and a concern with the problems of preserving it.

There are clear divisions of function and scope between national organizations and regional or local ones. The national groups deal mainly with particular aspects of the subject or problems of national or continental interest. They usually have professional staffs to carry out programs. The National Audubon Society, National Wildlife Federation, Izaak Walton League, Wilderness Society, and Nature Conservancy are examples.

The regional, State, and local organizations are even more diverse. They usually concentrate on education in the natural history of their areas and grapple with conservation problems in their own neighborhoods. They function through direct action of their members. Such groups commonly conduct field trips and classes, make studies of scientific worth, work with schools, publish magazines and booklets, preserve natural areas, and, as occasion demands, present their case to public officials.

The many autonomous regional and State Audubon societies are

typical of these organizations. Their ties with the National Audubon Society, which many of them antedate, are those of cooperation, not legal association. They vary from small town and city clubs to such a large and influential group as the Massachusetts Audubon Society—oldest in the world, with more than 9,000 members, having several sanctuaries throughout the State, conducting professional research programs, teaching children through the State school system and in summer camps of their own, presenting lectures, and producing publications.

Smaller groups often manage almost as active a program, depending on volunteer rather than paid staffs. Notable programs are carried out by Audubon Societies of Rhode Island, Florida, Michigan, New Jersey, Illinois, New Hampshire, the Audubon Naturalist Society of the Central Atlantic States, and many others.

In many States, the ornithological societies have similar programs. Natural history societies of other sorts also are prominent in this field, both those with a broad range of interests and those that specialize, perhaps in botany, or geology, or herpetology. The Federation of Ontario Naturalists is one of the largest and most effective of these organizations, with more than 3,000 adult members, and more than 12,000 children enrolled in its Young Naturalists' Club.

Rate of Progress in SCS Programs Shows Increase in Fiscal 1964

More conservation plans prepared, more landowners assisted, and more landowners applying conservation practices in fiscal year 1964 than in 1963 is the picture of the past year's conservation progress emerging from preliminary totals of SCS activities reports.

Data from work units and other field offices are processed at the USDA Management Data Service Center in New Orleans. Major items now available, but still subject to final verification, indicate substantial increases in conservation planning and application through SCS programs during the year.

SCS provided assistance in the preparation of 108,600 conservation plans in fiscal 1964, compared to 105,500 in 1963, an increase of about 3 percent. About 92 percent or 99,900 of the plans were prepared in regular soil conservation district operations, the others in watershed protection, Great Plains Conservation, or other programs administered by SCS.

Through all its activities, SCS provided planning or application service to nearly 1,124,000 landowners in fiscal 1964, compared to 1,042,000 in 1963. Of these, 1,039,000 were serviced through regular district operations in 1964, compared to 964,000 in 1963. About 752,000 landowners (681,000 in districts) applied one or more practices in fiscal 1964, compared to 666,000 (620,000) in 1963.

SCS consultive services to planning agencies, organizations, and individuals increased 35 percent in 1964, to a total in all programs of 84,000 services, compared to 62,000 in 1963. Ninety-six percent of consultive services were provided through soil conservation districts—80,000 in 1964 and 59,000 in 1963.

In the Great Plains Conservation Program landowners signed 3,719 new contracts covering 5,453,644 acres in 1964, compared to 2,852 contracts on 5,051,330 acres in 1963.

Planned cropland conversion in the new contracts will take 248,626 acres of land out of cultivation and put it into grass or other uses, compared to 191,826 acres in previous year. Great Plains contracts to June 30, 1964, provide for conversion of a total of 1,112,333 acres to grass. This figure is 23 percent or almost a fourth of the cropland in farms and ranches participating in the program.

Preliminary totals from 2,971 districts showed also that districts added 115,500 new cooperators operating 41.4 million acres in 1964, compared to 115,000 new cooperators operating 39.8 million acres in fiscal 1963. Nearly 2 million land owners and operators of 647.2 million acres of land were district cooperators at the end of the fiscal year.

The acreage of soil surveys increased slightly in soil conservation district operations but declined slightly through other programs. The total of all standard soil surveys completed with SCS funds in fiscal 1964 was approximately 62,080,000 acres, compared to 64,440,000 in 1963, and bringing the total to date to 523,208,000 acres. Ninety-five percent of the 1964 surveys, or 58,807,000 acres, were made in district operations, compared to 56,536,000 acres in 1963.

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Soybeans, a minor crop a half century ago, now are the Nation's fifth most important cash crop and its most important source of vegetable oil.

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Moisture, nutrients, and soil-blowing preventives are lost when fields are burned before plowing.

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When planting trees, shrubs, and ornamentals, be sure the soil is filled in around the roots, and not just over them.

◆

Teaching, research, and extension education by Land-Grant Institutions and the USDA play an important leadership role in the world's agricultural progress.

New Publications

Grass in Conservation in the United States. By the Soil Conservation Service (various authors). *1964. USDA, SCS-TP-143. 43 pp., illus.*

This publication focuses attention on the "grassland revolution" in American agriculture which, since the drought and depression of the 1930's, has raised grass (including legumes) from a minor resource on farms and ranches to a major role in production and soil conservation.

Four papers by the Administrator of the Soil Conservation Service and his chief plant scientists document the role of SCS in developing the technology and motivating the land use changes that brought the revolution to fruition. Today grass grows on about half the Nation's land and returns $17 billion annually through livestock products.

Administrator D. A. Williams writes of the historical background, B. D. Blakely of grass on farmland, B. W. Allred of private rangeland, and A. L. Hafenrichter and A. D. Stoesz of new grasses and legumes.

A chronological list of publications on grass by the SCS and a selected list of technical articles and bulletins published outside the Department detail the published record of the grassland revolution.

Manual of Outdoor Conservation Education. By Joseph J. Shomon. *1964. National Audubon Society, New York. Inf. Ed. Bul. 3. 96 pp., illus.* This bulletin provides information about how to establish and operate nature centers, outdoor laboratories, outdoor education classrooms, special park and forest areas, nature preserves and sanctuaries, natural or semi-wild areas, and camp reservations for educational purposes.

Rural Recreation Enterprises in New England. By Elmer J. Moore. *1964. U. S. Dept. Agr. Agr. Econ. Res. Rpt. 56. 27 pp.* Investments, returns, and problems of 32 selected enterprises are discussed.

Legumes and Grasses in Dryland Cropping Systems in the Northern and Central Great Plains. By Paul L. Brown. *1964. U.S. Dept. Agr. Misc. Publ. 952. 64 pp., illus.* The literature is reviewed and the value of legumes and grasses as soil-conserving and soil-improving crops discussed State by State.

Summary of Reservoir Sediment Deposition Surveys Made in the United States Through 1960. Compiled by James A. Spraberry. *1964. USDA Misc. Publ. 964. 61 pp., illus.* Summary by the Agricultural Research Service of data from all known U. S. reservoir sedimentation surveys.

Annual Lespedezas, Culture and Use. By P. R. Henson and W. A. Cope. *1964 U. S. Dept. Agr. Farmers' Bul. 2113. 16 pp., illus.* This bulletin, superseding Farmers' Bulletin 1852 and Leaflet 240, discusses the use of annual lespedezas in the eastern half of the United States as forage crops for midsummer and early fall grazing.

The Pinyon-Juniper Type of Arizona: Effects of Grazing, Fire, and Tree Control. By Joseph F. Arnold, Donald A. Jameson, and Elbert H. Reid. *1964. U. S. Dept. Agr. Prod. Res. Rpt. 84. 28 pp.*

Stream-Gaging Stations for Research on Small Watersheds. By Kenneth G. Reinhart and Robert S. Pierce. *1964. U. S. Dept. Agr. Hbk. 268. 37 pp., illus.* General guide on the design and construction of small stream-gaging stations.

Farm Costs and Returns. By Economic Research Service. *1964. U. S. Dept. Agr. Inf. Bul. 230. 93 pp., illus.* Summary estimates of costs and returns for 1963 and earlier years on selected commercial farms and a brief analysis of changes occurring in production, prices, income, and costs for each of these types of farms.

Cotton Irrigation in Southeastern United States. By O. L. Bennett, B. D. Doss, and D. A. Ashley. *1964. U. S. Dept. Agr. Inf. Bul. 282. 16 pp., illus.* A nontechnical summary of latest information on moisture requirements, methods of irrigation, and management of cotton in the humid South.

Micro-organisms. By C. R. Benjamin, W. C. Haynes, and C. W. Hesseltine. *May 1964. USDA Misc. Publ. 955. 36 pp.* What microorganisms are, where they grow, and what they do.

The Ohio River Basin. By Inter-League Survey Committee for the Ohio River Basin. *1964. League of Women Voters Education Fund, Washington, D.C. 51 pp., illus. 75c.* An attractive and well illustrated report on the major problems of the Basin—floods, pollution, inadequate recreation sites, and economically depressed areas — and what is being done about them.

25 Years with the Soil and Water Conservation Districts in Wisconsin. State Soil and Water Conservation Commission. *1964. Madison. 38 pp., illus.* A bird's-eye-view of districts' part in getting conservation on the land in the past 25 years.

◆

An application of nitrogen fertilizer on a stubble field will hasten decomposition and make the stubble even more valuable once it has been plowed or worked into the soil.

◆

Brief exposure to radio frequency (r-f) electric energy has increased germination of alfalfa seed by 35 percent in USDA laboratory studies.

From the Administrator:

Civil Rights Act • Rural Beauty

SINCE July 2 of this year when the Civil Rights Act of 1964 became the law of the land, there has necessarily been much discussion about it. Secretary Freeman personally discussed the effect of the new law on Department of Agriculture programs with all his State and Regional directors at a meeting in Washington the week of August 3. He told them that each of them would be required to see that the act is followed in the programs they administer.

"We share with you a firm belief that discrimination has no place either in the way an agency operates, or in the programs that it administers," he said.

During the same week, I discussed the application of the law to programs administered by the Soil Conservation Service, with all State conservationists.

Title VI of the act is the part that applies to SCS programs. This states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

This provision applies to the Small Watersheds Program, to the Flood Prevention Program, and to the Resource Conservation and Development Program. It also applies to all assistance provided to soil conservation districts. In this latter case, technical assistance supplied to districts is interpreted by the Department of Justice to be "financial assistance."

State conservationists have, or soon will have, advised district governing bodies and sponsoring organizations about Title VI and its application to soil and water conservation, watershed, flood prevention, and RC&D programs. SCS is concerned to see that organizations participating in these programs understand the national policy of nondiscrimination.

Actually the Service, no less than the districts and sponsoring organizations, has been so occupied with the planning and applying of conservation measures to land and water resources that there has been little room for discrimination. The question of what kind of a man owns or operates any land is not germane to the question of need for the conservation and development of land and water resources. It ought to be pretty easy to stay on the right side of the law in these programs!

There was consideration of including the nondiscrimination clause cited above in all Memorandums of Understanding between the Department of Agriculture and soil conservation districts, and in the Supplemental Memorandum between the districts and SCS. But this was not practical. The act applies, whether it is in memos of understanding or not, and whether anyone agrees or not.

Principal matter for attention now is to be sure everyone involved understands what is needed and avoids discrimination. The act applies only to program availability, insofar as resource conservation programs are concerned—not to employment, contracting, or other activities covered under executive orders or other laws.

But, whatever the activity or the legislation applying, there must be no discrimination either as to availability of the benefits of programs or to the priorities of services rendered.

APPEARANCE of the countryside is of concern to all Americans with pride in their native land and interest in its future. It is one of the important concerns of conservationists everywhere.

Soil conservation districts and watershed projects are making important contributions to the beauty of rural America. Everyone sees beauty in rolling land with contour strip crops, shady trees, grassed slopes, and sparkling ponds and streams. Conservation on the land always looks good!

Unfortunately, there are uses of the land as unsightly as the shocking scars of erosion and deposits of sediment that soil conservation efforts are gradually erasing. Such things as rural slums resulting from unfortunate housing or commercial developments made without the benefit of soil surveys, and the roadside automobile "graveyards" on the edge of every town and city, are depressing sights that detract from the rural scene. To say the least, they do not help the rural economy or add to the prestige of rural people.

One such slum or graveyard breeds others. And they are so unnecessary!

Perhaps ridding a community of these deplorable sights would not be considered strictly a "conservation job." But those who take pride in the countryside, as do soil conservation district leaders and the dedicated professional people who assist them, could hardly refrain from urging the elimination of things that sell rural America short. They can be depended on to lend a hand to efforts to preserve natural beauty and remove manmade blemishes.

As our population moves more and more over the landscape, as it inevitably must, it can do so in an orderly manner. It can help to enhance, not undermine, the appearance and prestige of rural communities. Why don't we all help to build America the Beautiful?—D. A. WILLIAMS

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Conservation Makes Showplace of Farm

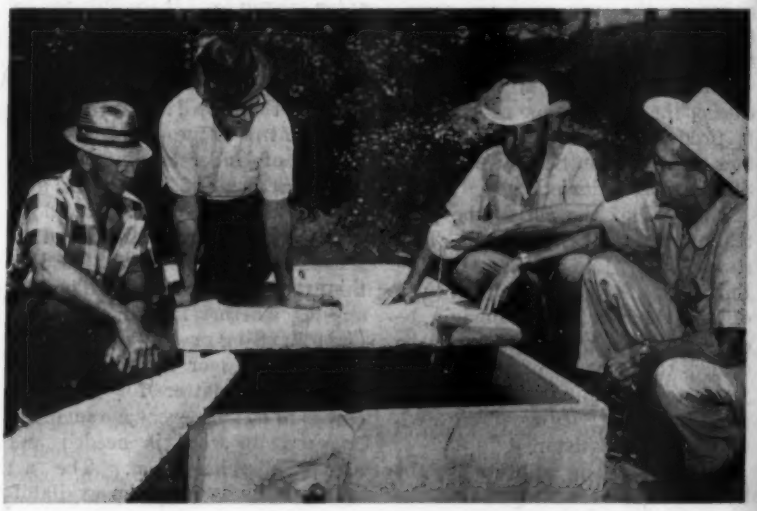
A $60,000 conservation program on a 435-acre irrigated farm in Adams County, Colo., has made it a showplace in the highly productive irrigated area north of Denver.

In a little over a decade, James E. Fry of Brighton, a cooperator and member of the board of supervisors of the West Adams Soil Conservation District, has moved over a quarter of a million cubic yards of earth in leveling his fields, laid 3 miles of concrete pipeline, and constructed a storage reservoir.

In this program he has used ASC cost-sharing assistance and was the first Great Plains Conservation Program cooperator in Adams County.

Mr. Fry finds time for other activities besides his farm operations. He served as secretary of the board of supervisors of his district from August 1951 until his election as chairman in March 1964. He is co-chairman of the Great Plains Conservation Program Committee of Districts.—CHARLES E. DAVIES, *Work Unit Conservationist, Brighton, Colo.*

SPRINGS SOLVE WATER PROBLEM



SPRINGS and seeps are proving to be the answer to the water supply problem in the Pike County Soil Conservation District, Ala. The topography of the area does not permit building a reservoir, and sandy soils and other conditions make ponds impractical on some farms.

Farmers there have developed nearly 100 springs and seeps at an average cost of about $60, excluding labor. They now have an abundance of cool, clear water to meet the needs of the farms, including a growing livestock industry. One spring supplies water for a farm and for 17 homes, 5 stores, and a small laundry in the town of Banks.

Pictured (l. to r.) are District Supervisors Sam S. Williams, James W. Mills, and Max Blackmon and Soil Conservation Service Conservationist Jimmy Green examining the water in a storage tank at a spring on the J. E. Dean farm.